

METHODS AND HARDWARE FOR SAFE MEMORY ALLOCATION IN ARBITRARY PROGRAM ENVIRONMENTS

ABSTRACT OF THE DISCLOSURE

In a method for dynamic allocation of memory address space, an original version of a program is executed. This execution includes the execution of a request to use memory address space occupied by an optimized version of the program that is protected from modification. When this request is detected, execution control is passed to an optimization code that was used to define the optimized program. The optimization code copies a portion of the optimized program residing in the memory address space requested by the original program, writes the copied portion to unallocated memory address space, and adjusts the code of the optimized program. The protection of the copied portion of the optimized program is released, and execution control is returned to the original program. The request to use the memory address space occupied by the portion of the optimized for which the protection has been released is then re-executed.